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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,836	12/07/2000	Sang In Kim	8733.325.00	8708

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EXAMINER	
DUONG, THOI V	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/730,836	KIM ET AL.	
	Examiner	Art Unit	
	Thoi V Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6 and 8-20* is/are rejected.

7)☒ Claim(s) *3 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This office action is in response to the RCE, Paper No. 12, filed September 17, 2003.

Accordingly, claims 1 and 9 were amended. Currently, claims 1-20 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1, 2, 4-6, and 8-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (USPN 6,038,008).

As shown in Figs. 7A-7H, Kim et al. discloses a method of fabricating a liquid crystal display (LCD) having a thin film transistor with a gate electrode 117a, a gate insulating film 123, an active layer 122, an ohmic contact layer 125, a source electrode 115a, and a drain electrode 115b on a transparent substrate 111, said method comprising:

forming an organic passivation layer 126 over the transparent substrate and over the thin film transistor (Fig. 7F and col. 4, line 60 through col. 5, line 2);

defining a contact hole 131 through the organic passivation layer to expose the drain electrode (Fig. 7F and col. 5, lines 3-8);

irradiating the organic passivation layer 126 with ultraviolet rays to form a buffer layer with roughened surface (Fig. 7G and col. 7, lines 8-10 and 25-29); and

forming a transparent pixel electrode 104 over the rough buffer layer and in the contact hole such that the pixel electrode contacts the drain electrode via the contact hole and such that the pixel electrode adheres to the buffer layer.

Kim discloses that the organic passivation layer is comprised of an acrylic organic compound, or benzocyclobutene (BCB), or perfluorocyclobutane (PFCB) (col. 4, lines 60-67; col. 5, lines 1-2), which has a hydrophobic property and a low dielectric constant (col. 5, lines 65-67). Kim further discloses that the UV treating method breaks the Si based bond structure at the surface of the passivation layer, which is substantially exposed to an atmosphere pressure (col. 8, lines 7-11) as a normal processing pressure, using high-energy or low-wavelength radiation, stripping C or H radicals from the surface to create a buffer layer with roughened surface for increasing adhesion to an ITO layer (col. 7, lines 25-29 and 45-47). Accordingly, the buffer layer is an oxide and inherently has a hydrophilic property and hence, the surface property of the organic passivation layer is changed by the UV treating method.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 2, 4-6 and 8-20 are rejected under the judicially created doctrine of double patenting over claims 1-10, 15-17 of U.S. Patent No. 6,038,008 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the organic passivation layer is comprised of an acrylic organic compound, or benzocyclobutene (BCB), or perfluorocyclobutane (PFCB) which has a hydrophobic property and a low dielectric constant. When the organic passivation layer is irradiated with UV rays, the surface property of the organic passivation layer is changed to become a roughened buffer layer. This buffer layer is an oxide and inherently has a hydrophilic property.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Response to Arguments

6. Applicant's arguments filed 09/17/2003 have been fully considered but they are not persuasive.

Applicant argued that the cited reference, USPN 6,038,008 of Kim et al., does not teach a method of fabricating a liquid crystal display comprising "irradiating the organic passivation layer with ultra violet rays to change the surface property of the organic passivation layer, thereby forming a hydrophilic buffer layer; and forming a pixel electrode over the hydrophilic buffer layer and in the contact hole such that the pixel electrode contacts the drain electrode via the contact hole and such that the pixel electrode adheres to the hydrophilic buffer layer." The Examiner disagrees with Applicant's remarks because, as shown in Figs. 7F-7H, Kim et al. discloses a passivation layer comprised of an acrylic organic compound, or benzocyclobutene (BCB), or perfluorocyclobutane (PFCB) which has a hydrophobic property. When irradiated with UV rays, the surface of the organic passivation layer is changed to become a roughened buffer layer for increasing adhesion to the ITO pixel electrode due to breaking the Si bond structure at the surface of the organic passivation layer. Thus, this buffer layer is an oxide and inherently has a hydrophilic property and hence, the surface property of the organic passivation layer is changed by the UV treating method.

Accordingly, with respect to claim 9, Fig.7H of Kim et al. clearly shows a hydrophilic buffer layer as roughened surface over the passivation layer 126, and an electrode 104 over said buffer layer.

Finally, claims 1, 2, 4-6 and 8-20 are rejected under the judicially created doctrine of double patenting over claims 1-10 and 15-17 of U.S. Patent No. 6,038,008 as described above. This patent is filed on Nov. 5, 1997 prior to the filing date of the priority document of the instant application, which is Dec. 17, 1999.

Allowable Subject Matter

7. Claims 3 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:
In addition to other elements as shown, none of the prior art of record suggests or discloses alone or in combination that the step of irradiating the organic passivation layer uses ultraviolet rays having wavelengths between about 100 to 200nm and produces a buffer thickness of 10A to 50A.

The most revelant reference, USPN 6,038,008 of Kim et al., fails to disclose or suggest the wavelengths between about 100 to 200nm and a buffer thickness of 10A to 50A. The Kim et al.'s reference only discloses a UV treating method using high-energy (low-wavelength) radiation on the organic passivation layer to create a roughened buffer layer for increasing adhesion to an ITO layer.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-

3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

12/30/2003

ROBERT H. KIM
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